Appendix 2.3

Network Provider Points of Presence by State

State	Total Included Networks with POPs	Network Provider with POP in State									
		AT&T	MCI	Sprint	WorldCom	Cable & Wireless	Qwest	IXC	Williams	Frontier	LCI
Alaska	1	X					X				
Alabama	6	X	X	X	X		X		X		
Arkansas	4	X	X	X	X						
Arizona	9	X	X	X	X	X	X	X	X	X	
California	10	X	X	X	X	X	X	X	X	X	X
Colorado	8	X	X	X	X		X	X	X	X	
Connecticut	9	X	X	X	X	X	X	X	X	X	
District of Columbia	10	X	X	X	X	X	X	X	X	X	X
Delaware	6	X	X	X	X	X	X				
Florida	9	X	X	X	X	X	X	X	X	X	
Georgia	10	X	X	X	X	X	X	X	X	X	X
Hawaii	3	X	X	X							
Iowa	5	X	X	X			X			X	
Idaho	4	X	X	X					X		
Illinois	10	X	X	X	X	X	X	X	X	X	X
Indiana	10	X	X	X	X	X	X	X	X	X	X
Kansas	6	X	X	X	X		X			X	
Kentucky	8	X	X	X	X		X	X		X	X
Louisiana	8	X	X	X	X	X	X	X	X		
Massachusetts	9	X	X	X	X	X	X	X	X	X	
Maryland	8	X	X	X	X		X	X	X	X	
Maine	4	X	X	X	X						
Michigan	10	X	X	X	X	X	X	X	X	X	X
Minnesota	9	X	X	X	X	X	X	X	X	X	
Missouri	9	X	X	X	X	X	X	X	X	X	
Mississippi	5	X	X	X	X				X		
Montana	3	X	X	X							
North Carolina	9	X	X	X	X	X	X		X	X	X
North Dakota	4	X	X	X	X						
Nebraska	6	X	X	X	X		X			X	
New Hampshire	3	X	X	X							
New Jersey	10	X	X	X	X	X	X	X	X	X	X
New Mexico	7	X	X	X	X		X	X		X	
Nevada	8	X	X	X	X		X	X	X	X	
New York	10	X	X	X	X	X	X	X	X	X	X
Ohio	10	X	X	X	X	X	X	X	X	X	X
Oklahoma	8	X	X	X	X		X	X	X	X	
Oregon	7	X	X	X	X		X		X	X	
Pennsylvania	10	X	X	X	X	X	X	X	X	X	X
Rhode Island	7	X	X	X	X		X		X	X	
South Carolina	7	X	X	X	X		X		X	X	
South Dakota	3	X	X	X							
Tennessee	10	X	X	X	X	X	X	X	X	X	X
Texas	9	X	X	X	X	X	X	X	X	X	
Utah	7	X	X	X	X		X		X	X	
Virginia	9	X	X	X	X	X	X	X	X	X	
Vermont	4	X	X	X						X	
Washington	8	X	X	X	X		X	X	X	X	
Wisconsin	9	X	X	X	X	X	X	X	X	X	
West Virginia	4	X	X	X	X						
Wyoming	3	X	X	X							

Source: CCMI Qtel 9000 Master Rate Center File; Qwest; IXC; Williams; LCI; Frontier

Note: Includes POPs scheduled to be deployed by 1999

UUNET's North American Peering Policy

1. A peering candidate's backbone needs to meet UUNET's backbone at an agreed-upon location (which may be a common exchange point) at DS-3 speed or above. If a single DS-3 is insufficient bandwidth at a given location, the peering candidate must have the resources and must be willing to increase bandwidth at that location. Maximum utilization must be less than 50% during the average busy hour.

2. A peering candidate needs to meet UUNET at minimally four geographically diverse locations across the US. Our intention is to minimize the backhaul of traffic across both networks. Therefore, the minimum requirement would be an East-Coast location and a West-Coast location plus, ideally, two Midwest locations. We may accept a second East- or West-Coast location as an alternative to one mid-west location.

3. A peering candidate would be expected to exchange at least 40 Megabits of traffic total average utilization at the beginning of the peering relationship.

4. A peering candidate must operate a fully-redundant and diverse clear channel DS-3 network (minimum) between peering sites with spare capacity, so as not to cause traffic overload on UUNET's network in the advent of a peering failure.

5. Peers must send UUNET traffic only where UUNET advertises routes for that traffic.

6. A peering candidate must operate a 24-hour, 7-day-per-week Network Operations Center.

7. Each peering candidate must provide a free PPP account for UUNET testing and auditing purposes.

8. No peer will default into UUNET's network, especially over the peering session.

9. Each peer will give routes to UUNET using BGP4 and properly setting the next hop to be itself, the advertiser of the network. Each peer will give UUNET's network to such peer's transit customer with the peer as the next hop, not UUNET. BGP route flap from the peer must be kept to a minimum.

10. A candidate must enter into a Mutual Non-Disclosure Agreement and an Interconnection Agreement.

11. All peers will advertise consistent routes at all peering points. This is in line with UUNET's shortest exit policy.

12. UUNET will not enter into new peering arrangements at public peering points if they are congested.

13. UUNET will not enter into concurrent peering agreements with its dedicated access customers, as this is likely to lead to inconsistent route advertisements, customer complaints, and difficulty for UUNET's operations personnel in troubleshooting any potential problems.

A. MCI's Public Peering Policy

Requirements for Public Peering with internetMCI

Connectivity

Active connections to at least four, geographically dispersed public interconnection points where MCI is also connected: MAE-East, MAE-West, Ameritech NAP, PacBell NAP, Sprint NAP.

Infrastructure

Nationally deployed, order-2 meshed DS3 (45 Mbps) backbone
DS3 connectivity to interconnection points
Fully staffed, 24x7 network operations center (NOC)
Agree to establish trouble ticket and escalation procedures as needed

Routing

Carry full routing at edge routers using BGP-4 and aggregated routes
Register routes with IRR
Register routing policy with the IRR
Filter routes at the network edge, i.e., only listen to the routes that a customer has pre-registered
Consistent routing announcement (i.e., the same set of routes announced with the same AS path length at all peering locations)
Must not establish a route of last resort (i.e., default route) directed at MCI
No third party routes that allow direct traffic exchange (in either direction) between MCI and the third party.

NOTE: MCI dedicated access customers cannot qualify as a peer network.

B. MCI's Direct Peering Policy

MCI DIRECT PEERING POLICY

This document describes the criteria that MCI has established for engaging in direct peering connections. It is intended to enable the establishment of direct peering connections between internetMCI and peer networks where these exchanges are equitable and are a cost-effective alternative to the public exchanges. Having a peering relationship at the public exchange points is not a prerequisite for the establishment of a direct peering relationship. Implementations are subject to availability of peering ports and internetMCI backbone capacity in particular locations.

1. General

- Direct peering connections are at DS-3 (45 Mbps) speeds or higher.
- Direct peering connections are established on a bilateral basis. In general, these connections will be established in pairs. MCI will pay for one of the circuit connections; the direct peer will pay for the other circuit connection. Neither party will apply port, service or other charges.
- The minimum number of direct peering connections is two.
- Generally, the direct peering connections are to be geographically dispersed. Examples: - Two connections: one on the East Coast, one on the West Coast - Four connections: one on the East Coast, one on the West Coast, one in the Midwest, one in the South.
- After establishment of direct peering connections, MCI expects to terminate the peering exchanges with that same party at the public peering points, if applicable. This will enhance the exchanges of traffic with other peers at the public peering points.
- Peering and Transit (customer) relationships between two networks are mutually exclusive.

2. Infrastructure

The direct peer must:

- Have a nationally (i.e., across the eastern, midwestern, and western sections of the United States) deployed Internet backbone in the U.S. operating on dedicated circuits of at least DS-3 (45 Mbps) speed. Each backbone hub must be connected to at least two other backbone hubs.

Operate a fully staffed, 24x7 Network Operations Center (NOC)

- Agree to establish trouble ticket and escalation procedures as needed

3. Routing

The direct peer must:

- Carry full routing at edge routers using BGP-4 and aggregated routes.
- Register routes with the Internet Routing Registry (IRR)
- Register routing policy with the IRR.
- Filter routes at the network edge, i.e., only listen to the routes that a customer has pre-registered.
- Provide consistent routing announcement (i.e., the same set of routes announced with the same as path length at all peering locations).

4. Traffic

- There is a minimum traffic requirement of 20 Mbps per pair of direct DS-3 peering connections. Also, each individual DS-3 connection must carry a minimum of 5 Mbps. These traffic volumes are measured in either direction (whichever is higher) and are weekly aggregated averages. Each additional pair of direct peering DS-3 connections requires an additional 20 Mbps of traffic. Whether this criterion is met will be determined based on traffic exchanged with the prospective direct peer at the public exchange points or through other reasonable means.
- The imbalance of traffic must not be disproportionately skewed. An imbalance of traffic (in vs. out) at a ratio of up to 1.8:1 in either direction is acceptable. The imbalance of traffic is to be measured in weekly aggregates over all the points where the parties exchange traffic.

5. Term

- The direct peering agreements are annual agreements. Whether the criteria in this policy are met is to be reviewed annually.